

## THREE SPECIES OF THE GENUS PSEUDOCERCOSPORA FROM WEST BENGAL

BY

ASHOK DAS

Department of Botany, Presidency College  
Calcutta-700 073

Key words : Taxonomy, *Pseudocercospora*, West Bengal.

Three species of *Pseudocercospora* Spegazzini, viz. *Pseudocercospora clerodendri* (Miyake) Deighton, *Pseudocercospora fuligena* (Roldan) Deighton and *Pseudocercospora marsdeniae* (Hansf.) Deighton have been collected, figured and described from 24-Parganas district of West Bengal during 1983-86 are described below. It is first time reported from the State of West Bengal.

### INTRODUCTION

The genus *Pseudocercospora* was established by Spegazzini in 1910, as dematiaceous hyphomycetes with large Phragmidium-like conidia and he showed *Pseudocercospora vitis* (Lev.) Speg. as the type species of the genus. The genus *Pseudocercospora*, one of the largest member of *Cercospora*-like fungi. To deal with the genus, unthickened conidial scars and nature of denticulation and proliferation of conidiogenous cell have been primarily taken into consideration. Deighton (1976-1987) critically studied the genus and laid down the points of demarcation from the other allied genera (*Cercoseptoria*, *Pantospora*, *Pseudocercospora*) by citing minute and important characters.

1. *Pseudocercospora clerodendri* (Miyake) Deighton, Mycological Paper Nos. 140 : 141 (1976).

Synonym : *Cercospora clerodendri* Miyake, Bot. Mag. Tokyo 27 : 53 (1913).

Leaf blotches amphigenous, few, dark brown, sometimes spots formed on both the corresponding surfaces of lamina, circular to subcircular, grey centre surrounded by dark brown margin, 1-5 mm wide; caespituli amphigenous, brown to blackish brown; primary mycelium internal; stroma few, dark brown, upto 66  $\mu$ m in diam.; conidiophores amphigenous, chiefly epiphyllous, fasciculate, in fascicles of 3-15 stalks, pale to mid-olivaceous brown, straight to bent, simple to branched, pluriseptate (1-8); old conidial scar present on the shoulder of short

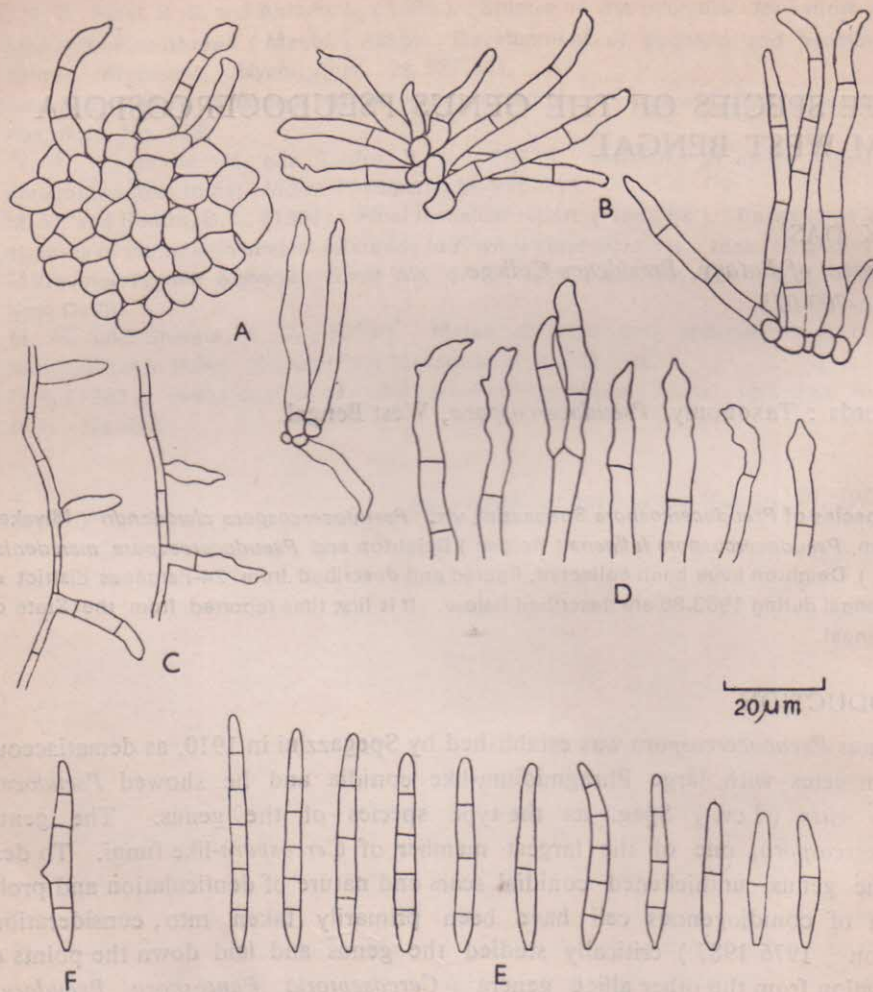


Fig. 1 : *Pseudocercospora clerodendri*

A & B, Conidiophore fascicles ; C, Secondary mycelial hyphae bearing conidiophores ; D, Conidiophores ; E, Conidia ; F, Conidia in germination

denticles or lying flat against the side wall of conidiophores,  $3.0-5.0 \times 16.5-19.0 \mu\text{m}$  ; secondary mycelium superficial, external mycelial hyphae pale olivaceous,  $2.5-4.0 \mu\text{m}$  wide producing secondary conidiophores as lateral appendages ; conidia obclavate-cylindric to cylindric, subhyaline to pale olivaceous, usually straight, rarely mildly bent, thin-walled, smooth, pluriseptate (2-8), tip subobtuse to bluntly rounded,  $3.0-5.0 \times 33.0-76.0 \mu\text{m}$  (Fig. 1).

Specimen studied : On *Clerodendron indicum* ( Linn. ) Kuntze (fam. Verbanaceae). Mallickpur, 24-Parganas, West Bengal, India, PCC 3720 ( =IMI 295540 ), leg. A.-K. Das, 15 March, 1985.

2. *Pseudocercospora fuligena* (Roldan) Deighton Mycological Paper Nos. 140 : 144 (1976).

Synonym : *Cercospora fuligena* Roldan, Philipp. J. Sci. 66 : 8 (1938).

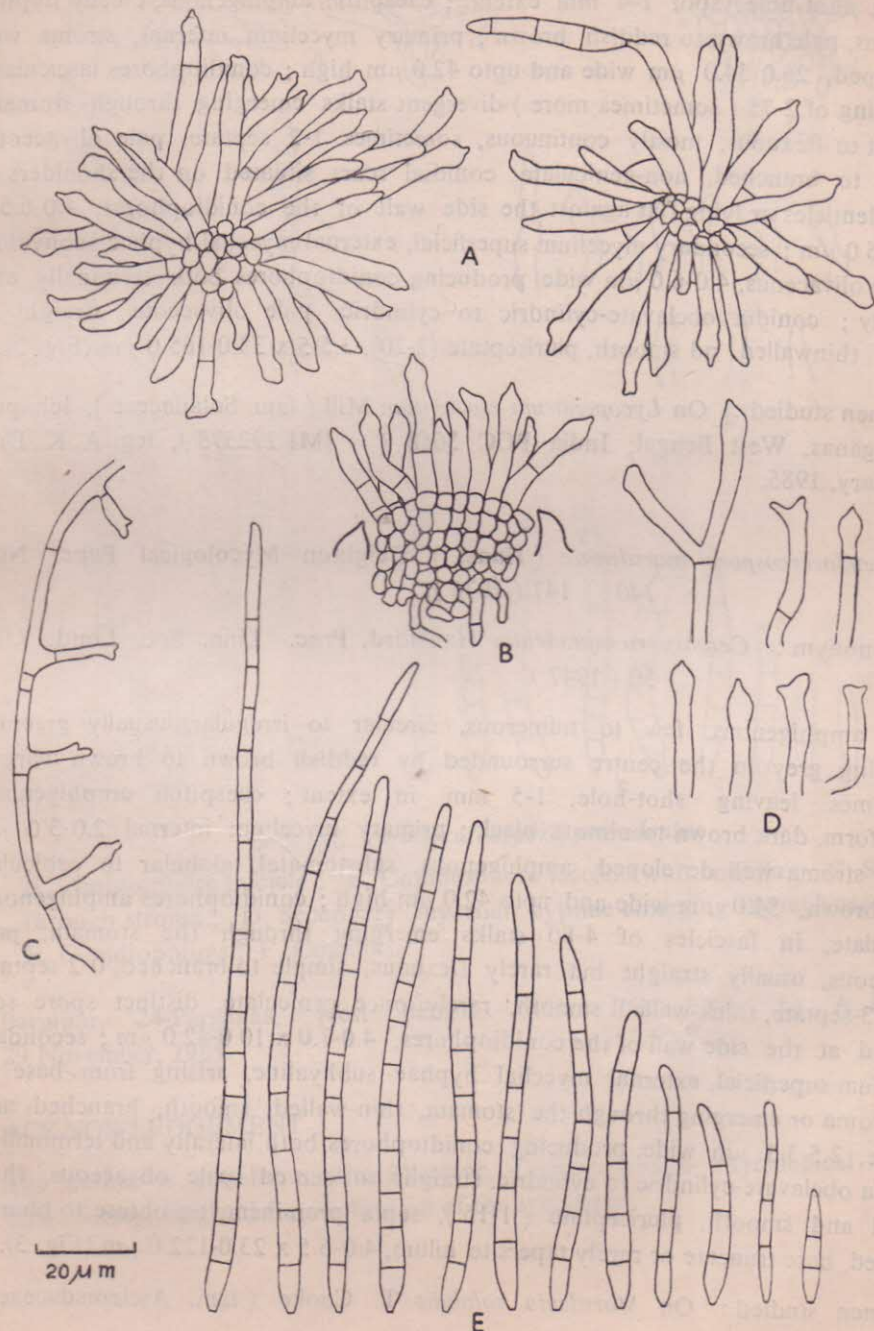


Fig. 2 : *Pseudocercospora fuligena*  
A, Conidiophore fascicles ; B, Section through stroma ; C, Secondary

Blotches formed on lamina, amphigenous, scattered, angular to irregular, light to pale yellow without any boundary, spots formed at later stages, very small to large, rusty brown in the centre surrounded by reddish brown margin, occasionally leaving shot-hole, spot 1-4 mm extent; caespituli amphigenous, chiefly hyphophyllous, pale brown to reddish brown; primary mycelium internal, stroma well developed, 26.0-54.0  $\mu\text{m}$  wide and upto 42.0  $\mu\text{m}$  high; conidiophores fasciculate, consisting of 2-75 (sometimes more) divergent stalks emerging through stomata, straight to flexuous, mostly continuous, sometimes 1-2 septate, pale olivaceous, simple to branched, non-geniculate, conidial scars situated on the shoulders of short-denticles or lying flat against the side wall of the conidiophores, 4.0-6.5 x 22.0-66.0  $\mu\text{m}$ ; secondary mycelium superficial, external mycelial hyphae subhyaline to pale olivaceous, 4.0-6.0  $\mu\text{m}$  wide, producing conidiophores both terminally and laterally; conidia obclavate-cylindric to cylindric, pale olivaceous, straight to curved, thinwalled and smooth, pluriseptate (2-20), 3.5-5 x 33.0-165.0  $\mu\text{m}$  (Fig. 2).

Specimen studied: On *Lycopersicon esculentum* Mill (fam. Solanaceae), Ichapur, 24-Parganas, West Bengal, India PCC 3658 (= IMI 292573), leg. A. K. Das, 3 January, 1985.

3. *Pseudocercospora marsdeniae* (Hansf.) Deighton Mycological Paper Nos. 140: 147 (1976).

Synonym: *Cercospora marsdeniae* Hansford, Proc. Linn. Soc. Lond. 158: 50 (1947)

Spots amphigenous, few to numerous, circular to irregular, usually greenish becoming grey in the centre surrounded by reddish brown to brown margin, sometimes leaving shot-hole, 1-5 mm in extent; caespituli amphigenous, punctiform, dark brown to almost black; primary mycelium internal 2.0-3.0  $\mu\text{m}$  wide; stroma well developed, amphigenous, substomatal, globular to orbicular, dark brown, 54.0  $\mu\text{m}$  wide and upto 42.0  $\mu\text{m}$  high; conidiophores amphigenous, fasciculate, in fascicles of 4-80 stalks emerging through the stomata, pale olivaceous, usually straight but rarely flexuous, simple to branched, 0-2 septate, rarely 3-septate, thick-walled, smooth, rarely once geniculate, distinct spore scar situated at the side wall of the conidiophores, 4.0-7.0 x 10.0-42.0  $\mu\text{m}$ ; secondary mycelium superficial, external mycelial hyphae subhyaline, arising from base of the stroma or emerging through the stomata, thin-walled, smooth, branched and septate, 2.5-3.5  $\mu\text{m}$  wide, producing conidiophores both laterally and terminally; conidia obclavate-cylindric to cylindric, straight to curved, pale olivaceous, thin-walled and smooth, pluriseptate (1-15), septa prominent, tip obtuse to bluntly rounded, base truncate or rarely tapers to hilum, 4.0-6.5 x 23.0-122.0  $\mu\text{m}$  (Fig. 3).

Specimen studied: On *Marsdenia volubilis* T. Cooke (fam. Asclepiadaceae),

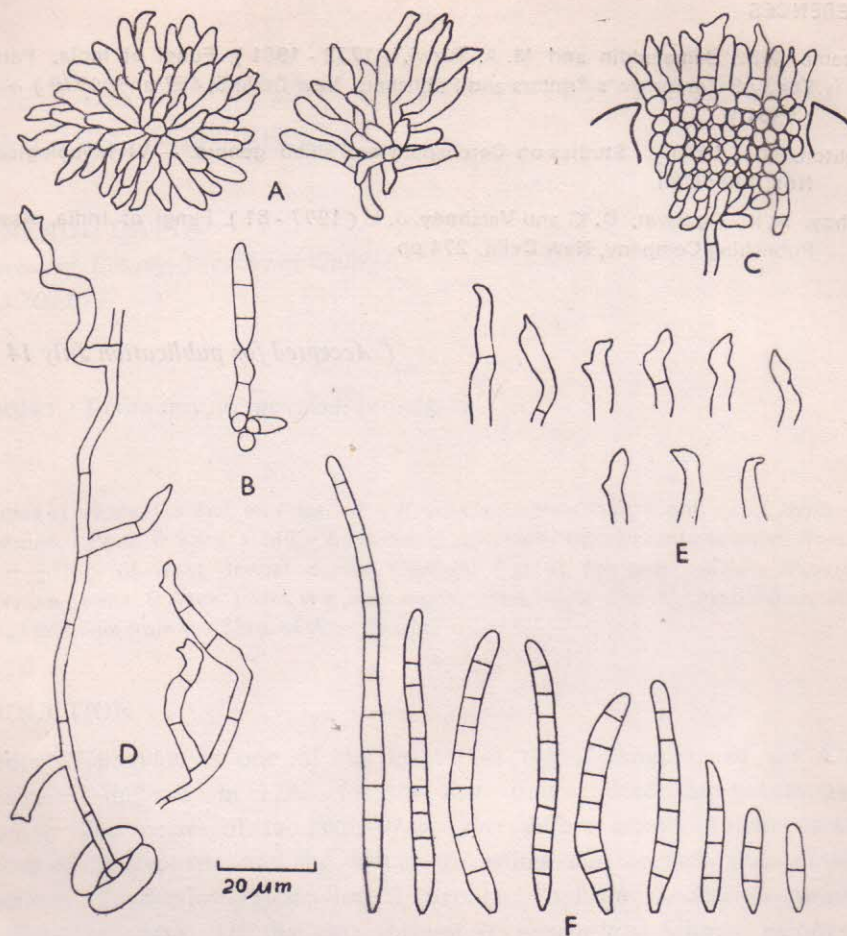


Fig. 3 : *Pseudocercospora marsdeniae*

A, Conidiophore fascicle ; B, Conidiophore fascicle with conidia ; C, Section through stroma ; D, Secondary mycelial hyphae emerging through stomata ; E, Conidiophores ; F, Conidia

Baruipur, 24-Parganas, West Bengal, India. PCC 3781, leg. A. K. Das, 29 November, 1985.

ACKNOWLEDGEMENT

The author is grateful to the Director, Commonwealth Mycological Institute, Kew, Surrey, England for verification of the specimens.

## REFERENCES

- Bilgrami, K. S., Jamaluddin and M. A. Rizwi, (1979 - 1981), Fungi of India, Part-I & II, Today & Tomorrow's Printers and Publishers, New Delhi-5, 467 pp (1979) + 270 pp (1981).
- Deighton, F.C. (1976). Studies on Cercospora and allied genera. — VI Mycological Paper Nos. 140 : CMI.
- Sarbhoj, A. K., Agarwal, D. K. and Varshney, J. L. (1977 - 81). Fungi of India, Associated Publishing Company, New Delhi, 274 pp.

( Accepted for publication July 14 1988 )

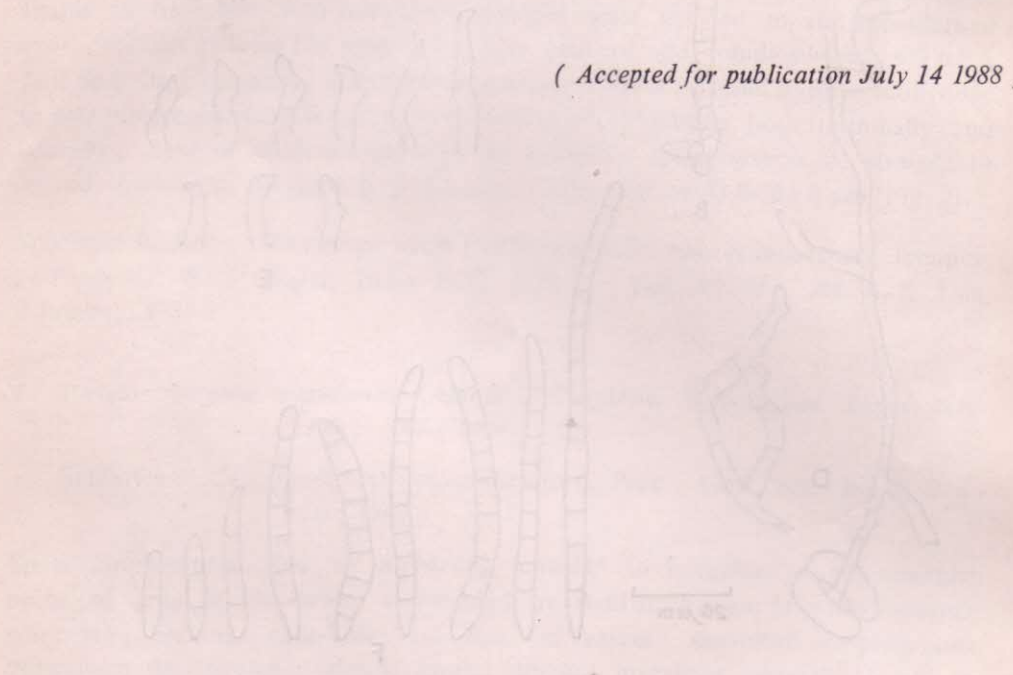


Fig. 3 : *Pseudocercospora muscardina*  
 A. Conidiophore (axial); B. Conidiophore (axial) with conidia; C. Section through spore; D. Secondary mycelial hyphae emerging through stomata; E. Conidiophore; F. Conidia.

Author's address: Botany, 24-Palazzo, West Bengal, India. P.O. Box 1281, Calcutta 700 012.  
 29 November 1982

ACKNOWLEDGEMENT  
 The author is grateful to the Director, Commonwealth Mycological Institute, Kew, Surrey, England for ventilation of the paper.